From: Gaughan, Daniel [Gaughan.Daniel@epa.gov]

**Sent**: 3/15/2016 9:12:56 PM

To: Nwosu, Bernard [Ben.Nwosu@WestonSolutions.com]

Subject: Re: Site work dates

How much is the individual analysis for the parameters we want to run?

Dan Gaughan 917-613-2153 gaughan.daniel@epa.gov

On Mar 15, 2016, at 5:06 PM, Nwosu, Bernard < Ben. Nwosu@WestonSolutions.com > wrote:

If you can estimate the number of samples you want we should be able to give you a rough estimate tomorrow but it will be based on lab procurement costing from prior sampling events.

Thanks,

Ben Nwosu

Weston Solutions, Inc.

RST3/ED2

1090 King George Post Road, Suite 201

Edison, New Jersey 08837 Phone: (732) 585-4413 Cell: (908) 565-2980 Fax: (732) 225-7037

Email: Ben.Nwosu@WestonSolutions.com

Sent from my mobile device

On Mar 15, 2016, at 5:01 PM, Gaughan, Daniel < Gaughan. Daniel@epa.gov > wrote:

I just got my computer to download Lyndsey's attachment.

Lyndsey, I think your plan looks good and matches with what Ben has proposed to a degree. I don't know if we need all of the samples that Ben has proposed. 168 samples seems like a lot. I think we should screen the samples either with the Ludlum 2241 or the PIC to determine if we need to collect the samples or not. Also, I thought we wanted to go to 8 ft with the borings, especially on the Hickory Homes portion due to the supposed filling of the site. I didn't get to review the depth of gw info yet to see if we need the 3 borings to 15 ft.

Ben, can you determine the cost of the analyses we are proposing? I don't know what the budget will be for sampling.

Thanks, Dan

Dan Gaughan

On-Scene Coordinator, US EPA Region II gaughan.daniel@epa.gov
732-906-6984 office
917-613-2153 cell

----Original Message-----From: Nguyen, Lyndsey

Sent: Tuesday, March 15, 2016 3:15 PM

To: Gaughan, Daniel < Gaughan. Daniel @epa.gov>; Nwosu, Bernard

<Ben.Nwosu@WestonSolutions.com>

Subject: RE: Site work dates

I spent the last few days doing some digging, matching data/pictures/diagrams, and doing a historical assessment on what I already knew about CRU to finally come up with the number of samples, sampling locations, and justification for each samples. I came up with a total of 19 samples (including 2 samples for background). Attached is my wish-list for sampling at CRU. Feel free to subtract or add to the proposed samples in the attached document.

Hope all is well!

Lyndsey
Lyndsey Nguyen
Environmental Response Team-Las Vegas

Phone: 702.784.8018 Cell: 702-373-3756

Email: Nguyen.Lyndsey@EPA.gov

----Original Message----

From: Nwosu, Bernard [mailto:Ben.Nwosu@WestonSolutions.com]

Sent: Tuesday, March 15, 2016 11:32 AM

To: Gaughan, Daniel <Gaughan.Daniel@epa.gov>; Nguyen, Lyndsey

<Nguyen.Lyndsey@epa.gov>

Cc: Benton, Tim < Tim.Benton@WestonSolutions.com>

Subject: RE: Site work dates

Dan,

The following narrative below summarizes the decisions made during our telephone scoping meeting of March 10, 2016. Please review and let me know if you have any comments, otherwise please concur so that we can proceed with procuring equipment and services.

As part of the current Removal Assessment of the Canadian Radium and Uranium Site (the Site), Weston Solutions, Inc., Removal Support Team 3 (RST 3) has been tasked with providing support to the U.S. Environmental Protection Agency (EPA) for additional ground radiological survey and providing a drilling Subcontractor to advance up to 20 soil borings at locations throughout the Site. The Removal Assessment is scheduled to begin on April 4 through 8, 2016.

The radiological survey and soil sampling event is being conducted to identify additional source areas and to delineate the extent of on-site radioactive

contamination. With the support of RST 3, a mobile radiological survey requiring the EPA On-Scene Coordinator (OSC) to walk predetermined paths within the Site will be conducted using a radiation survey setup comprising a Ludlum-2241 with a sodium iodide (NaI) scintillator attachment linked to a Trimble(r) Global Positioning System (GPS) unit which will be connected to a VIPER system, a wireless network-based communication systems, via an internet source. The VIPER system will provide instantaneous real-time gamma radiation readings through a computer server (Viper Deployment Manager [VDM]). In addition, instantaneous gamma readings and corresponding coordinates of identified "Hot Spots" (locations with significantly elevated above-background gamma measurements) will be documented and utilized on-site by the OSC to select soil sampling locations. At the discretion of the OSC, additional gamma survey may be conducted at the selected soil sampling locations using a Reuter-Stokes RSS-131ER High Pressure Ion Chamber (HPIC) which will provide a more accurate gamma measurement.

Prior to mobilizing to the site for the event, RST 3 will contact Dig Safely New York to conduct a subsurface utility clearance within the Right of Way (ROW) areas of the Site. In addition, prior to conducting any drilling activities RST 3 drilling subcontractor will clear each proposed soil sampling location for subsurface utilities using ground penetrating radar (GPR). Soil sampling will be conducted using a drilling equipment (i.e. Geoprobe(r)) to advance soil borings at all 20 locations to depths of 8 feet below ground surface (bgs) in 17 of the locations and up to 15 feet bgs in three locations. The soil sampling locations will be determined based on radiological surveys data, selected on-site, and flagged by the OSC. MacroCore sampling tubes lined with new, clean acetate sleeves will be utilized for each soil boring. After completing each boring, a PVC pipe will be inserted into the bore hole to prevent it from caving in. The OSC will lower the NaI scintillator into the borehole and gamma measurements will be collected and documented every 6-inch interval up to the total depth of the boring. At each soil sampling location, RST 3 will document the characteristics of the soil obtained in each sample sleeve and soil samples will be collected at 6 inch intervals from each sample sleeve. Upon completion of gamma screening and sampling at each boring, the hole will be filled in reversed order with the leftover soil and bagged garden soil, tamped down, and sealed with bentonite.

Although all the soil borings will be screened for gamma radiation at 8 to 15 feet bgs, soil samples will only be collected from surface to 4 feet bgs at each sampling location. RST 3 will collect up to 168 soil samples, including eight field duplicates and additional sample volumes for matrix spike/matrix spike duplicate (MS/MSD) analysis at depths ranging from 0-6, 6-12, 12-18, 18-24, 24-30, 30-36, 36-42, and 42-48 inches bgs at all the 20 soil boring locations. Field duplicates and MS/MSD samples will be collected at a frequency of one per 20 field samples. Soil samples will be collected for definitive data and quality assurance/quality control (QA/QC) purposes and will be analyzed for isotopic thorium (thorium-228, thorium-230 and thorium-232), isotopic uranium (uranium-233/234, uranium-235/236 and uranium-238), other alpha emitting actinides and plutonium, radium-226 (in-growth), radium-228, and other gamma emitting radioisotopes. Aqueous rinsate samples will be collected daily to demonstrate proper decontamination of non-dedicated sampling equipment (i.e., Geoprobe(r) cutting shoe) and will be analyzed for isotopic thorium, isotopic uranium, radium-226 and radium-228.

### Thank you.

Ben Nwosu Weston Solutions, Inc. RST3/ED2

## ----Original Message----

From: Gaughan, Daniel [mailto:Gaughan.Daniel@epa.gov]

Sent: Monday, March 14, 2016 3:16 PM

To: Nwosu, Bernard < Ben. Nwosu@WestonSolutions.com >; Nguyen, Lyndsey

<Nguyen.Lyndsey@epa.gov>

Cc: Benton, Tim < Tim.Benton@WestonSolutions.com>

Subject: RE: Site work dates

#### Lyndsey,

I could do it the week of April 4th or 18th. If that works with your schedule? Dan

# Dan Gaughan

On-Scene Coordinator, US EPA Region II gaughan.daniel@epa.gov
732-906-6984 office
917-613-2153 cell

#### ----Original Message----

From: Nwosu, Bernard [mailto:Ben.Nwosu@WestonSolutions.com]

Sent: Monday, March 14, 2016 2:35 PM

To: Nguyen, Lyndsey < Nguyen. Lyndsey@epa.gov >; Gaughan, Daniel

<Gaughan.Daniel@epa.gov>

Cc: Benton, Tim <Tim.Benton@WestonSolutions.com>

Subject: RE: Site work dates

#### Good afternoon Dan,

Please let me know the changes in the dates scheduled for this event. We will need at least three weeks to enable us complete RFPs with our drillers. Please consider the week of April 18 or 25 or let me know what other alternative dates you decide.

#### Thanks,

Ben Nwosu Weston Solutions, Inc. RST3/ED2

#### ----Original Message----

From: Nguyen, Lyndsey [mailto:Nguyen.Lyndsey@epa.gov]

Sent: Friday, March 11, 2016 3:46 PM

To: Gaughan, Daniel < Gaughan. Daniel @epa.gov>

Cc: Nwosu, Bernard <Ben.Nwosu@WestonSolutions.com>

Subject: Site work dates

I'm so sorry. I didn't realize that I have a personal trip from April 14-17. Is there anyway we could switch weeks?

#### Sent from my iPhone

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